

Review

Ferguson, D. C., in Dominick, R. B., *et al.*, 1978, The Moths of America North of Mexico, Fasc. 22.2, Noctuoidea (in Part): Lymantriidae. E. W. Classey Ltd. and the Wedge Entomological Research Foundation, 1978. \$48.00 (Subscription \$40.00). Distributed in USA and Canada by Entomological Reprint Specialists, P.O. Box 77224, Dockweiler Station, Los Angeles, CA 90007. Date of publication 25 March 1978.

This fascicle, often advertised as soon appearing, and eagerly awaited, finally did. The Lymantriidae are a very difficult family and many relationships had to be elucidated to make the publication useful: names, distribution and general considerations.

Retention of the family name is to be lauded as well as other often applied generic names which have been unstable in the past because of international faunal and taxonomic complications. Examples include *Gynaephora*, *Dasychira*, *Lymantria*, *Leucoma* and *Euproctis*. Appreciable conservatism is also shown in specific names, e.g. *Euproctis chrysorrhoea*. One may hope that the final nomenclature of Ferguson finds easy access into our collections and papers.

One important question arises as to whether it was necessary to fill the literature with all the new "subspecific" names. Additional biochemical and larval taxonomic research would probably obliterate some of the "subspecies" and show them to be species in their own right. Here is certainly a field open for further research.

In general the keys are good because they are short, useful and workable. The larval key to the last instar larvae of *Orgyia*, however, leaves a general question open. Can a larva of a "subspecies" be described when the so-called "type" of this "subspecies" is questionable ("*leucostigma plagiata*") and the larvae in question do not yield adults agreeing with this "type"? Otherwise the key is helpful and correct.

Dasychira is certainly the most difficult genus, and Ferguson, whom we know was especially involved over decades with this genus, can take pride in the fruits of long labor. The explanations concerning the generic name finally make *Dasychira* definitive for our species. Also we congratulate Ferguson for his success in re-defining *D. tephra*. Following the latter conclusion everything else falls in place. We are also thankful that he was able to confirm and give new meaning to names and taxa so familiar to all of us, but which were previously so often doubted by overzealous workers: *obliquata*, *cinnamomea*,

atrivenosa, *meridionalis*, *basiflava*, *leucophaea*, *dorsipennata*, *plagiata* and *grisefacta*. Other names such as *aridensis*, *parallela*, *lemmeri*, *pini* disappeared, after having contributed much confusion in the past.

The other difficult genus in the family is *Orgyia*. Regretably one can not say what was just said about *Dasychira* in this case. The good points of the treatment include:

a) Confirmation that all included North American species belong to one well-defined genus, *Orgyia*.

b) Confirmation of *O. cana* as a species in its own right. The latter, however, is not a "revised status," as it was already treated as such in *Entomol. Zschr.* 83: 12, in 1973, a publication omitted from the citations. Problems with associations of *Orgyia* larvae would have been completely and easily resolved if Ferguson had used the preserved and associated larvae and adults from the McFarland rearings (Los Angeles County Museum of Natural History). It should be reiterated that MONA authors seem to rely too exclusively on the collections of the United States National Museum, an objection Rindge raised in *Journ. Lep. Soc.* 28: 4.

c) Giving taxonomic status to the puzzling very large California *Orgyia (magna)*, although further research is quite necessary.

d) Detection of the old Boisduval specimen in the collection of the United States National Museum which Guerin-Meneville figured and used for the name of *O. detrita*. It should be remarked that "Degens Bd. Am. B." is not "apparently . . . an unpublished name" but is Latin for "coming from Boisduval America Borealis" (the Latin verb is *dego*, -i, -ere).

e) Additional knowledge about *O. falcata* and its larva.

The negative side includes the following points:

a) The laconic statement "the female genitalia have not been studied." Besides the fact that they have been very extensively studied and reported in several issues of *Entomol. Zschr.*, the female genitalia are of decisive taxonomic importance in the genus *Orgyia*. For a "definitive" presentation of North America moths the attitude is not quite understandable.

b) Omission of observations about pupae is likewise not quite understandable, the more so as the form of the pupae also appears as important *specifi* characteristic.

c) Omission of any study of the eggs by scanning electron microscopy and electrophoresis as well as important larval charac-

ters, such as mandibles, ocelli, setae on thoracic legs, headcapsules and surface of exterior cuticle.

d) Claiming of a "new synonymy" for *O. definita kendalli* on p. 75 when the synonymy (*definita kendalli* = *leucographa*) was earlier established in *Entomol. Zschr.* 83: 14 (1973).

e) Establishing of "new status" in the *rindgei/leuschneri* complex while Chua *et al.* had already published specific status for *O. rindgei* in *Journ. Res. Lep.* 15: 4 (1976). The treatment was repeated by Riotte in *Entomol. Zschr.* 87: 3 (1977).

Some special words have to be directed to the "enfant terrible" of the whole fascicle, *O. leucostigma*. As Ferguson presents it, it appears to make sense. The realities, however, are otherwise:

a) The aedoeagus which he says "may be at once distinguished from all other species in that it is apically tapered to a point" is blunt and not tapered to a point, as SEM micrographs show.

b) The (not studied) female genitalia would have helped to another, and perhaps more correct, classification.

c) Use of the earlier published results of egg electrophoresis would have shown that indeed *leucostigma* is extensively sympatric with *wardi* which in no way can be regarded as a "subspecies" or "synonym" of anything.

d) Larval structures, if they had been used, would have shown the same (they also have been published previously).

e) To use the so-called "Walker type" of *Acyphas plagiata*, abdomenless as it is and without any locality label, as type for a "subspecies" of *leucostigma* in Nova Scotia, replacing *wardi*, is absurd at best. Insect pins may be convincing sometimes, but in a case like this, certainly not. The Walker specimen could be used for the real *leucostigma* in Nova Scotia, but I can see no need for such a designation. Competent workers in the British Museum came to a quite different evaluation of the Walker specimen and placed it together with *leucostigma* from Wisconsin as the best match. Therefore, one should list the Walker type as "incertae sedis". One good point should be mentioned in this regard; with Abbot's larval painting of *leucostigma* declared as lectotype of the species, we have a good basis for its definition. It would also appear that the male figure of Abbot's *leucostigma* is really *definita*. (Many of Abbot's plates are mixed with non-conspecific creatures.)

Ferguson's final treatment of the *leucographa* Geyer problem is good and without objection.

The plates in this volume are of the expected quality and the depicted specimens rich and very useful. The only thing we miss is a single specimen of *Orgyia wardi* from the type locality (Prospect Road, Nova Scotia). *O. wardi* would be best figured with a *leucostigma* from the same locality to show the difference. The Nova Scotia specimens figured are all *leucostigma*.

Missing from the literature cited is the important paper by Chua *et al.*, 1976, Investigation of selected species of the genus *Orgyia* (Lymantriidae) using isoelectrofocusing in thin layer polyacrylamide gel, (*Journ. Res. Lep.* 15 (4): 215-224) as well as Riotte, 1973, Über *Orgyia* (*O.*) *gulosa* und *Orgyia* (*O.*) *cana* (Lep: Lymantriidae), (*Ent. Zeits.* 83 (12): 129-140), and by the same author, 1977, Abschliessende Bemerkungen zu den Studien über nordamerikanische Arten der Gattung *Orgyia* (Lep.: Lymantriidae), (*Ent. Zeits.* 87 (3): 9-12) concerning *definita*, *rindgei* and *leucographa* = *detrita*. The above omissions do not otherwise interfere with the great value of the fascicle. We certainly welcome its final appearance and wish it long-lasting success.

To clarify the question of sympatric occurrence of *wardi* and *leucostigma* in Nova Scotia, we include illustrations of both from the type Prospect Road locality. The former was reared from a blackish-brown-headed larva on larch; the latter from a cinnabar red-headed larva on alder. We also present an illustration of the type of *Acyphas plagiata* Walker which shows relationships to the Nova Scotia *leucostigma* specimen, however, not to the specimen of *wardi*.

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